

Compressed Natural Gas School Buses



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**Presented by Michael Andre
Supervisor of Transportation**

Lower Merion School District

- Located in suburban Philadelphia.
- Historic, mostly residential community.
- Affluent, well educated population with high expectations.
- Nationally recognized schools of excellence.
- Transportation provided to 8,200 students attending 125 schools.

What Prompted Our Decision to Move Away from Diesel?

- Fleet facility is located within quiet, residential neighborhood.
- Pollution and noise generated by diesel fleet was a major irritant to immediate neighbors.
- CAA and EPACT hinted at eventual alternative fuel mandates.
- Legislation offered attractive incentives.
 - 1.2 million in grants.

Why CNG?

- Domestically produced.
- Abundant supply.
- Competitively priced.
- Reduced tailpipe emissions.
- Extensive vehicle selection.
- Most developed infrastructure.
- Excellent safety record.

Fleet Profile

- 63 dedicated CNG buses.
 - 55 John Deere 8.1 liter, 72 passenger, rear engine school buses.
 - 1 Cummins, 5.9 liter, 72 passenger, rear engine school bus.
 - 7 Chevrolet, 5.7 liter, 24 passenger, after-market conversion, mini-buses.
- 2.9 million miles logged.
 - Miles range from a low of 7,000 to a high of 86,000.

Fleet Profile

- 4.92 average miles per gallon.
- Two, fast-fill, fuel stations each rated at 110 SCFM.
- 600,000 gallons of diesel displaced.
- Currently dispense an average of 800 GGE daily.
- Two hose dispenser at each site.
- Ten minute typical fueling time.

School Buses and CNG

A Great Combination

- Clean and quiet.
 - Two excellent attributes for vehicles that operate primarily in residential areas.
- Healthier school environment.
 - Air quality and its impact on the health of children is a growing concern.
- Industry is well positioned.
 - Two of the three U.S. manufacturers of full size school buses offer CNG buses.

School Buses and CNG

A Great Combination

- Cost Effective.
 - Each school bus equates to four autos.
 - Expense shared by entire community.
- High Visibility.
 - Widespread use of CNG in school buses will make the idea of alt fuels more commonplace.

School Buses and CNG

A Great Combination

- Driver retention.
 - There is a chronic shortage of qualified school bus drivers. CNG buses offer a more pleasant driving experience resulting in increased driver satisfaction.
- Improve student behavior.
 - Drivers report reduction in engine noise results in a calmer, less stressful ride for all.

The Target - U.S. School Bus Fleet

- 448,307 school buses in U.S.
- 3,788,427,941 annual miles.
- Assuming an average of 10 mpg, a complete conversion of the nation's school bus fleet would result in an annual displacement of 378 million gallons of diesel.
- Using normal replacement schedules, the entire U.S. fleet could be converted in 15 years.

Roadblocks to Progress

- Money
 - Approximately \$30,000 more per vehicle.
 - Substantial investment in infrastructure.
- Human Nature
 - Change? I love the status quo.
- Fear
 - Let the other guy stick his neck out.
- Lack of Political Will/Leadership
 - What ever happened to our national energy goals?

Roadblocks to Progress

- The Diesel Establishment.
 - Successfully portray AFV's as oddities hardly worthy of serious consideration.
 - The other side has defined us as a niche fuel, i.e., useful for certain narrowly defined applications.
- “Barbecue Grill Syndrome”.
 - The alt fuel message has not reached the decision makers or general public. There remains an enormous amount of misinformation and ignorance.

Strategies for Action

- Offer school bus specific incentive grants.
- Partner with national, state, and local PTO's.
- Work with state legislatures to offer incentives to local districts.
- Partner with other organizations sharing similar goals.
- Target niche organizations within niche markets.
- Some “arm twisting” may be required.

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